

An extremely unusual condition that leads to intestinal obstruction: Foramen Winslow hernia

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ABSTRACT

It is known that foramen Winslow hernia (FWH) is a very rare disease and difficult to diagnose because there are no specific examination findings. Patients usually present to the emergency department with an intestinal obstruction. Delay in diagnosis may cause ischemia and perforation of the intestinal loop. Difficulties in early diagnosis increase the probability of this condition resulting in mortality. A 41-year-old male patient was admitted to the emergency department with colic abdominal pain lasting for 2 days. The patient was hospitalized for further examination and treatment. Due to the improvement in his clinical state, the patient was discharged; however, 2 days later, he was readmitted to the emergency department with an inability to pass stool or flatus, nausea, and vomiting, as well as abdominal pain. After laboratory tests and imaging methods were applied to the patient, surgery was decided upon. In the laparoscopic examination, it was observed that the small bowel loop herniated into the foramen Winslow (FW) at 220 cm proximally from the ileocecal junction. Herniated bowel loops were reduced. The open FW was not intervened in, and the operation was terminated. Due to their rarity, FWHs are less likely to be considered a preliminary diagnosis in individuals who present to the emergency department with intestinal obstruction. FWH may be considered in patients with congenital anomalies and without previous abdominal surgery. The best imaging technique for diagnosis is contrast-enhanced abdominal computed tomography (CT), and it is critical to recognize bowel loops in the omentum minus on CT.

Keywords: Congenital anomaly; foramen winslow hernia; intestinal obstruction.

INTRODUCTION

Internal hernia is defined as the herniation of any organ into the intra-abdominal cavity caused by pathological or natural causes.^[1] The Foramen Winslow hernia (FWH) was first described by Jacobus Benignus Winslow (1669–1760). The caudate lobe of the liver above, the hepatoduodenal ligament anteriorly, the first part of the duodenum inferiorly, and the vena cava posteriorly constitute the margins of the FW.^[2] FWH refers to herniation in this area. Internal hernias account for <1% of all abdominal hernias. FWH is known to account for 0.08% of all abdominal hernias and 8% of internal hernias.^[2] The small intestine (63%) and cecum, ascending colon (30%) herniated in FWHs, and transverse colon herniation (7%) can be seen rarely.^[1] About 200 cases have been described in the literature so far, and it is known to be a very rare condition.^[2,3]

Early diagnosis and timely intervention are of vital importance; mortality can increase by up to 50% with delayed interventions.^[2] Patients present to the emergency department with signs of intestinal obstruction. Symptoms and findings can vary from non-specific abdominal pain to acute abdomen, depending on the timely presentation of the patient.^[2,4] The most important imaging method in diagnosis is computed tomography (CT), which can provide information about both the possibility of early diagnosis and the severity of incarceration and strangulation.^[5,6]

CASE REPORT

A 41-year-old male who had right upper quadrant pain in the form of isolated colic was admitted to the outpatient emergency department. On physical examination, it was de-

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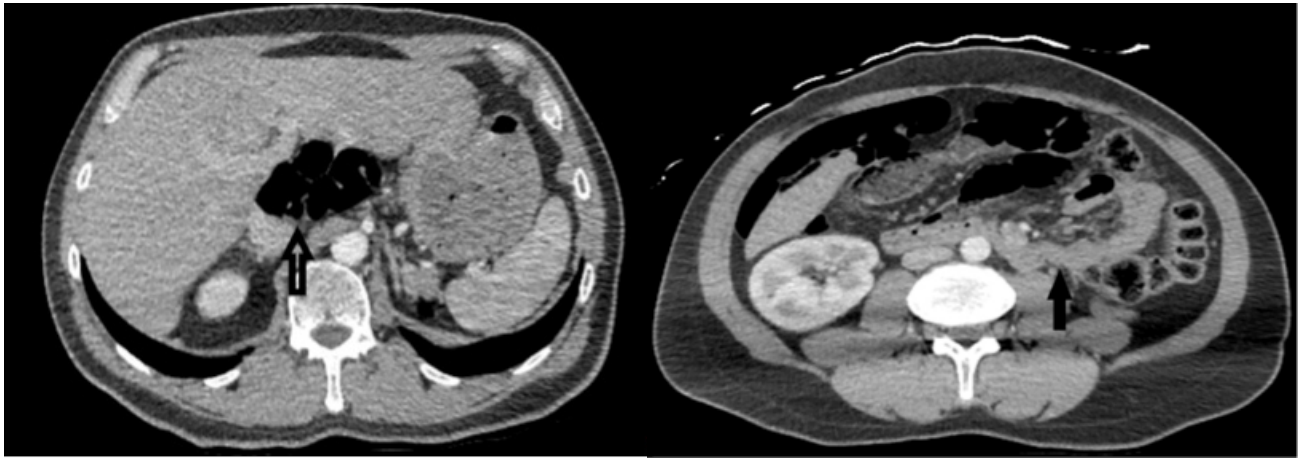


Figure 1. A normal small bowel loop that entered the omentum without any sign of intestinal obstruction.

terminated that vital signs were stable, with mild tenderness in the right upper quadrant, no nausea or vomiting, and no flatus fecal discharge. The patient stated that he had experienced similar complaints in the past with milder symptoms. The patient had a history of congenital left kidney agenesis. A Lichtenstein hernia repair was performed due to left inguinal hernia 10 years ago. The patient had no history of smoking, alcohol addiction, or drug use. The small intestines were shown to extend under the liver and pass to the omentum minus side in the total abdominal CT with intravenous (i.v.) contrast; however, intestinal obstruction findings were not found (Fig. 1). The patient was hospitalized with a preliminary diagnosis of chilaiditis. At the time of admission to the emergency room and follow-up, the patient's liver enzymes, pancreatic enzymes, electrolytes, and other biochemical values were within normal parameters. At the time of emergency service admission, the patient's white blood cell (WBC) count was 12290/mcL, C-reactive protein (CRP) was 12 mg/L, and lactate was 1.94 mmol/L.

Oral intake was stopped, and a nasogastric and urinary catheter were inserted into the patient. IV hydration (0.9% NaCl, 5% dextrose), a proton pump inhibitor, was started as treatment for the patient, and regular mobilization was recommended. On the 5th day of the follow-up, oral intake was started, the patient tolerated oral intake, infective parameters regressed, flatus feces discharge occurred, and he was discharged on the 7th day.

The patient was readmitted to the emergency department 2 days after discharge due to nausea, vomiting, and an inability to pass flatus and stool for 12 h. On physical examination, there was widespread tenderness and distension in the abdomen, but no signs of peritonitis were observed. The rectal examination revealed the ampulla to be empty. Small intestine loops were shown to be dilated, air-fluid levels were observed in the intestines, and small intestine loops were located in the omentum minus in the entire abdominal CT with i.v. contrast (Fig. 2). Laboratory examination revealed WBC 11450/mcL, CRP

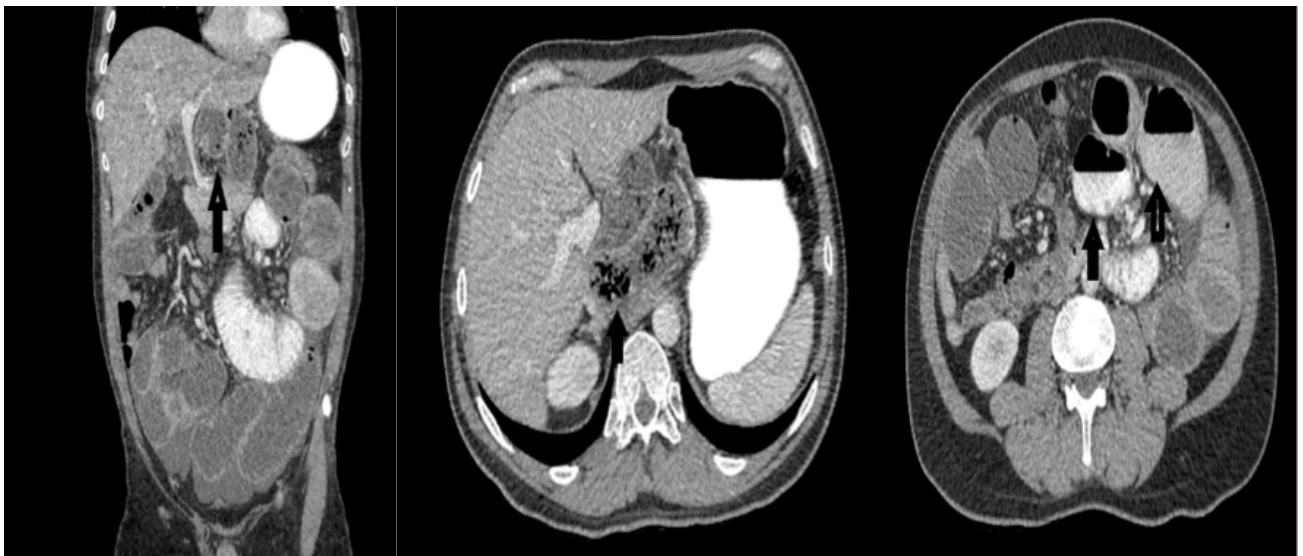


Figure 2. Small intestine loop passing into omentum minus and dilated small intestine segments due to intestinal obstruction

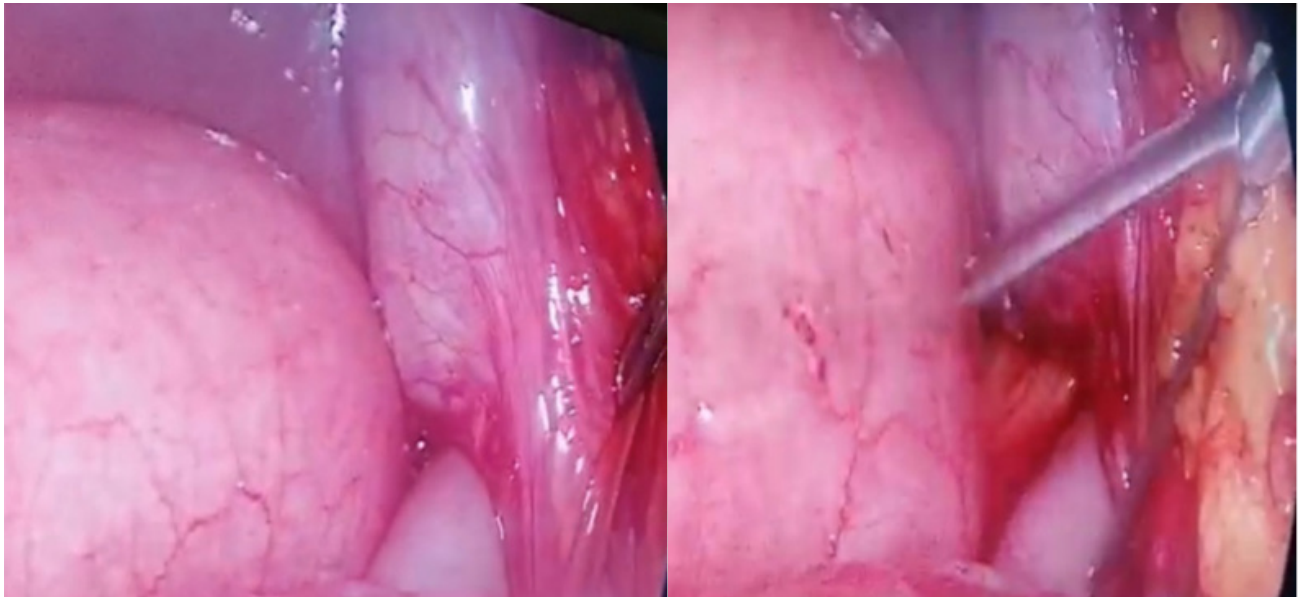


Figure 3. Laparoscopic view of herniated bowel loop to foramen Winslow

10 (mg/L), and lactate 2.35 (mmol/L), but electrolyte and other biochemistry parameters were within normal ranges. The patient was hospitalized in the general surgery service with a preliminary diagnosis of intestinal obstruction, and surgery was decided after the complaints did not regress in the 24 h follow-up. Written and verbal consent was obtained from the patient.

The operation was started in the Trendelenburg position, and the operating table was inclined to the left lateral of the patient. Laparoscopic exploration was performed using three ports. The small intestine mesos was lengthy, and the omentum majus was atrophic, according to the initial inspection. Starting from the ileocecal junction, all small intestines were explored proximally. A partial small bowel segment herniated to FW in the ileocecal 220 cm (Fig. 3). Herniated bowel loops were reduced. The defect was not closed, and the operation was terminated because the greater omentum was agenetic and formed the boundaries of vital structures (Fig. 4). The patient was discharged on the 2nd postoperative day after tolerating oral food, flatus feces discharge, and regression of distension.



Figure 4. The foramen Winslow and its borders following the herniated bowel loop's reduction

DISCUSSION

FWH patients may present with isolated epigastric and right upper quadrant pain or may present with symptoms of nausea, vomiting, and jaundice in addition to pain. Abdominal contrast-enhanced CT was determined to be the most important imaging tool for diagnosis. CT can reveal information regarding the presence and severity of obstruction in addition to the diagnosis. Despite this, the preoperative diagnosis rate is below 10%. FWH is recognized to be caused by three main factors: excessive visceral movement, elevated intra-abdominal pressure, and enlargement of the FW. In addition to these, anatomical risk factors include an atrophic greater omentum and a lengthy small bowel mesentery.^[7] Treatment usually requires surgical reduction.^[8] Surgery is possible with both open surgery and laparoscopic approaches, but it is known that completing the operation with the laparoscopic approach will enable the patient to recover faster.^[9]

Decompressing the intact bowel loop with controlled perforation will aid reduction in situations where the herniated bowel segment cannot be reduced through surgical intervention or there is a high risk of intestinal injury and perforation due to severe trauma while being reduced. So, it is believed that the risk of uncontrolled fecal contamination will be avoided and an uncontrolled perforation in a weak intestinal segment will be prevented.^[9] Discussions continue on whether to close the FW to prevent a recurrence. It is known that there is still no standard approach to this issue. While some experts suggest filling the FW with omentum and detecting the intestinal meso or primary closure of the FW, some experts stated that closing the FW will increase portal vein thrombosis and cause jaundice due to bile duct obstruction.^[9-11] In this case, the defect was not closed because of the agenetic omentum and the high probability of

damaging important anatomical structures. In the literature, it is seen that the herniated bowel segment is usually the cecum and ascending colon in cases where the intestinal meso is detected. The cecum and ascending colon were reduced to the abdomen and fixed to the side wall of the abdomen. In this case, it was not detected because the herniated bowel segment was in the small intestine, and fixing the herniated small bowel meso to another bowel meso would create a new intra-abdominal space and cause another internal hernia.

CONCLUSION

Despite the advances in imaging techniques, it is difficult to diagnose internal hernias due to FWH, which is very rare, but seeing an intestinal loop in the omentum minus on contrast-enhanced abdominal CT should suggest FWH. It should not be forgotten that there may be other anomalies in patients with congenital anomalies. In cases of intestinal obstruction due to internal hernia, a laparoscopic approach can be considered as the first choice in the early period when there is no incarceration, strangulation, or perforation of the intestines. More studies are needed to determine the standard approach for closure of FW after a reduction in internal hernias due to FWH.

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REFERENCES

- Downs P, Downes N, Zayshlyy E, Esper C, Giuseppucci P. Internal hernia through the foramen of Winslow. *J Surg Case Rep* 2018;2018:rjy329.
- Abu-Swis S, Cohen N, Wallach N, Abo-Sharb A, Sebbag G, Kian W. Foramen of Winslow hernia years after a Ladd's procedure: A case report. *Int J Surg Case Rep* 2020;72:556-9. [CrossRef]
- Ayoob F, Michael R, Chadnick Z, Fasanya C. Internal hernia of caecum through the foramen of Winslow. *BMJ Case Rep* 2019;12:e228239.
- Moris D, Tsilimigras DI, Yerokun B, Seymour KA, Guerron AD, Fong PA, et al. Foramen of Winslow hernia: A review of the literature highlighting the role of laparoscopy. *J Gastrointest Surg* 2019;23:2093-9.
- Sikiminywa-Kambale P, Anaye A, Roulet D, Pezzetta E. Internal hernia through the foramen of Winslow: A diagnosis to consider in moderate epigastric pain. *J Surg Case Rep* 2014;2014:rju065. [CrossRef]
- Wiesner W, Khurana B, Ji H, Ros PR. CT of acute bowel ischemia. *Radiology* 2003;226:635-50. [CrossRef]
- Buisset C, Postillon A, Aziz S, Bilbault F, Hoch G, Nessler JP, et al. Laparoscopic management of an ascending colon hernia through the foramen of Winslow. *J Surg Case Rep* 2020;2020:rjaa283. [CrossRef]
- Karlsen EA, Keogh C, Sandstrom A, Won CK. Missed diagnosis of a foramen of Winslow internal hernia. *ANZ J Surg* 2021;91:E789-90.
- Daher R, Montana L, Abdullah J, d'Alessandro A, Chouillard E. Laparoscopic management of foramen of Winslow incarcerated hernia. *Surg Case Rep* 2016;2:9. [CrossRef]
- May A, Cazeneuve N, Bourbao-Tournois C. Acute small bowel obstruction due to internal herniation through the foramen of Winslow: CT diagnosis and laparoscopic treatment. *J Visc Surg* 2013;150:349-51. [CrossRef]
- Leung E, Bramhall S, Kumar P, Mourad M, Ahmed A. Internal herniation through foramen of Winslow: A diagnosis not to be missed. *Clin Med Insights Gastroenterol* 2016;9:31-3. [CrossRef]

OLGU SUNUMU - ÖZ

İntestinal obstruksiyona neden oldukça nadir bir durum: Foramen winslow herni

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Foramen winslow hernisi (FWH) çok nadir görülen ve spesifik muayene bulguları olmadığı için tanı konulması zor olan bir hastalık olduğu bilinmektedir. Hastalar acil servise ileus tablosu ile başvurmaktadır. Tanıda geç kalınması barsak anasının iskemi ve perforasyonuna sebep olabilmektedir. Erken tanı konulmasındaki zorluk bu durumun mortalite ile sonuçlanma ihtimalini artırmaktadır. 41 yaşında erkek hasta acil servise iki gündür devam eden kolik tarzda karın ağrısı ile başvurdu. Hasta tetkik ve tedavi amacıyla genel cerrahi servisine yatırıldı. Takiplerinde klinik tabloda rahatlama olması üzerine taburcu edildi fakat 2 gün sonra karın ağrısına bulantı ve kusmaların eşlik etmesi, gaz-gaita çıkaramama durumunun eklenmesi ile tekrar acil servise başvurdu. Hastaya yapılan laboratuvar ve görüntüleme incelemeleri sonrası ameliyat kararı alındı. Uygulanan laparoskopik incelemede, ileoçekal bileşkedeki proksimale doğru ilerlendi ve 220. cm de ince barsak anasının Foramen Winslow'a herniye olduğu görüldü. Herniye barsak anası redükte edildi. FW açıklığına müdahale edilmedi ve operasyon sonlandırıldı. Foramen winslow hernilerinin nadir görülmesi, ileus nedeniyle acil servise başvuran hastalarda ön tanı olarak düşünülme ihtimalini azaltmaktadır. Doğustan konjenital anomalileri olan, geçirilmiş batın cerrahisi olmayan hastalarda Foramen Winslow Herni ihtimali düşünülebilir. Tanıda en iyi görüntüleme yönteminin Kontrastlı batın bilgisayarlı tomografi (CT) olup CT'de omentum minusta barsak anasının görülmesi önemlidir.

Anahtar sözcükler: Foramen Winslow herni; intestinal obstruksiyon; konjenital anomali.

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